

UNDERBODY PROTECTION (M998A AND M113 WITH WINCH)

1 KIT

Segregated Pack	GOVT PART #	AMG PART # if different	NOMENCLATURE	QTY PER/KIT	NOTES
1 KIT					
					APPLY MIL-STD-130 PLASTIC LABEL TO ITEMS HIGHLIGHTED IN BOLD. (SEE PRINT IF *)
1	B1821BH038C150N	MS90728-64	SCREW, 3/8 - 16 X 1 1/2	2	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 1 LABEL.
1	9430677	MS90728-34	SCREW, 5/16 - 18 X 1	12	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 2 LABEL.
2	12460145-1		SCREW, 3/8 - 16 X 2 1/4	1	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 2 LABEL.
2	B1821BH038C113N	MS90728-61	SCREW 3/8 - 16 X 1 1/8	7	
2	9428795	MS90728-71	SCREW 3/8 - 16 X 3 1/4	5	
3	12460145-2		SCREW, 3/8 - 16 X 2	1	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 3 LABEL.
3	2436162		WASHER, 5/16 FLAT	36	
3	9422299		NUT, 7/16 - 14 P. T.	4	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 4 LABEL.
4	MS51943-39		NUT, 1/2 - 13 P. T.	4	
4	2436163		WASHER, 3/8 FLAT	38	
4	9430724	MS90728-73	SCREW, 3/8 - 16 X 3 3/4	1	
5	MS51943-35		NUT, 3/8 - 16 P. T.	19	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 5 LABEL.
5	453039		SCREW, 5/16 - 18 X 2 3/4	6	
6	12447149		WASHER, SPECIAL	4	PLACE INTO BAG. HEAT SEAL OR STAPLE AND APPLY SEGREGATED PACK NO. 6 LABEL.
6	MS51943-33		NUT, 5/16 - 18 P. T.	18	
6	B1821BH038C100N	MS90728-60	SCREW, 3/8 - 16 X 1	4	
7	12338186-69		SPACER, REAR	9	CUSHION WRAP 6 X 12 SMALL AIR CAP AND APPLY SEGREGATED PACK NO. 7 LABEL.
12447143	*		SHIELD ASM., INTERMED.	1	
12447144	*		SHIELD ASM., REAR	1	
12447145	*		BRACKET, REAR MTG.	3	
12447146	*		BRACKET ASM., MTG. - LH	1	
12447147	*		BRACKET ASM., MTG. - RH	1	

**UNDERBODY PROTECTION (M998A AND M1113 WITH WINCH)
1 KIT**

12447148	*	BRACKET, TUBE SUPT.	2	
12447150	*	SHIELD, FUEL TANK	1	
12447151	*	SHIELD, TRANSFER CASE	1	
12447163-2		SKID PLATE	1	
12460415		SHIELD ASM., FRONT	1	
12460291		INSTALLATIONS INSTRUCTIONS	1	8 sheets
12460292		INSTALLATIONS DRAWING	1	4 sheets

PLACE SEGREGATED PACK BAGS 1 THROUGH 6
PLUS SEGREGATED PACK 7 INTO A WP1029 CARTON
AND WATER TAPE.

PLACE CARTON ABOVE AND ALL OTHER ITEMS INTO
A WOOD BOX SHIPPER 61 X 28 X 7-1/4.

LINE BOTTOM OF BOX WITH CREPE KRAFT PAPER
AND CUSHION WRAP OR SEPARATE PARTS AS
REQUIRED WITH "PAD PACK" CUSHIONING.
IF DRAWINGS ARE AVAILABLE PLACE INTO BAG AND
HEAT SEAL OR STAPLE. PLACE ON TOP OF PARTS IN
WOOD BOX.

START BY LOADING 12447143 ON BOTTOM.
PLACE 12460415 OVER 12447143.

PLACE 12447144 OVER 12447143.

PLACE 12447151 NEST TO 12460415.

PLACE 12447146 ON BOTTOM NEXT TO 12447144.

PLACE 12447147 ON BOTTOM NEXT TO 12447144.

PLACE HARDWARE CARTON NEXT TO 12447146 AND
12447147.

PLACE 12447150 ON TOP OF 12447143 AND 12460415.
PLACE 12447163-2 ON TOP.

INCLUDE A COPY OF THIS PACKING SHEET ASA
PACKING LIST.

NAIL AND BAND BOX.
APPLY KIT LABEL OR BAR CODE AND
IDENTIFICATION LABELS AS REQUIRED.

REVISIONS

LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	REDRAWN WITH CHANGE (AMG U1770)	00-07-24	CD 57

DRAWING CONTROL		AM General Corporation				
CHANGE DATE	CHANGE NO.	CHG. LET.	CHANGE	DATE	DR.	CK.
RL/1-23-98	144-493		PROD. RELEASE	10-19-98	Z3	
A/7-24-00	144-51008		REV. A ADDED PER PROG. 00-109M ECP-U1770	1-23-02	SL	
A/7-25-00	144-51132		SHT.G, PAGE. C 9 D REVISED EAR N1032, PPEPT T 6369	1-24-02	48	

NOTES:

- 1. APPLICABLE STANDARDS/SPECIFICATIONS:**

INSTALLATION INSTRUCTIONS UNDERBODY PROTECTION ACCESSORY KITS

SECTION I. INTRODUCTION

- 1-1. PURPOSE. THE PURPOSE OF THESE INSTRUCTIONS IS TO PROVIDE A PROCEDURE FOR INSTALLATION OF UNDERBODY PROTECTION ACCESSORY KITS ON 1-1/4 TON TRUCK, M1113 AND M1114 SERIES M998A2 VEHICLES.**

M998A2

REV STATUS OF SHEETS	REV	A1	A	A	A	A1	A	A					
	SHEET	1	2	3	4	5	6	7	8				
PMIC NA		CONTRACT NUMBER DAAE07-92-C-R010 CONTRACTOR AM GENERAL CORP. ENGINEERING & TECHNICAL SERVICES DIV. LIVONIA, MICHIGAN						U.S. ARMY TANK-AUTOMOTIVE COMMAND WARREN, MICHIGAN 48397-5000					
APPLICATION													
NEXT ASSY	USED ON			DRAWN BY HB	DATE (YR-MO-DA) 97-05-02				SIZE A	CAGE CODE 19207	12460291		
57K3495	M1113			CHECKER JRC	ENGINEER R PAVOL								
57K3494	M1114			DRAWING APPROVAL W Gray 00-08-22				SCALE NONE	UNIT WT. —	SHEET 1 OF 8			
57K3493	SERIES			DESIGN APPROVAL R Blaylock 00-08-22									
57K3492	M998A2	<i>D.F.</i> JW 00/04/13						SCALE NONE	UNIT WT. —	SHEET 1 OF 8			
MATL ENGR													

SECTION II. INSTALLATION KIT

2-1. NEW MATERIAL. INSTALLATION KITS, 57K3492 FOR M998A2 AND M1113 WITH WINCH, 57K3493 FOR M1114, 57K3494 FOR M1113 WITHOUT WINCH, AND 57K3495 FOR M998A2 WITHOUT WINCH, CONTAIN THE FOLLOWING ITEMS. QUANTITIES MAY VARY FROM KIT TO KIT DEPENDING ON VEHICLE MODEL.

<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>MODEL</u>	<u>QTY.</u>
12338186-69	SPACER, REAR	ALL	9
12338186-70	SPACER	M1114	1
12447142	SHIELD ASSEMBLY, FRONT	M1113 WO/W ONLY	1
12447143	SHIELD ASSEMBLY, INTERMEDIATE	ALL	1
12447144	SHIELD ASSEMBLY, REAR	ALL	1
12447145	BRACKET, REAR MOUNTING	ALL	3
12447146	BRACKET ASSY, L.H. SHIELD	ALL EXCEPT M1114	1
12447147	BRACKET ASSY, R.H. SHIELD	ALL EXCEPT M1114	1
12447148	BRACKET, TUBE SUPPORT	ALL	2
12447149	WASHER, SPECIAL	ALL	4
12447150	SHIELD, FUEL TANK	ALL	1
12447151	SHIELD, TRANSFER CASE	ALL	1
12447163-1	SKID PLATE	M1114 ONLY	1
12447163-2	SKID PLATE	M998A2 W/W ONLY	1
12447164	SKID PLATE	M1113 WO/W ONLY	1
12460145-1	SCREW	ALL	1
12460145-2	SCREW	ALL	1
12460291	INSTALLATION INSTRUCTIONS	ALL	1
12460292	INSTALLATION DRAWING	ALL	1
12460414	SKID PLATE	M998A2 WO/W ONLY	1
12460415	SHIELD ASSEMBLY, FRONT	ALL EXCEPT M1113 WO/W	1
12460499	ROD	M1114	1
12460500	BRACKET, L.H.	M1114	1
12460501	BRACKET, R.H.	M1114	1
MS51943-33	NUT	ALL	18
MS51943-35	NUT	ALL	20
MS51943-39	NUT	ALL	6
B1821BH038C100N	SCREW	DRAWING CONTROL	5
B1821BH038C113N	SCREW	CHANGE DATE	7
B1821BH038C150N	SCREW	A/7-24-00	2
172487	SCREW	ALL	1
453039	SCREW	ALL	6
2436162	WASHER	ALL	36
2436163	WASHER	ALL	40
2436165	WASHER	M1114	2
9422299	NUT	ALL	4

M998A2

TITLE INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	SIZE A	CAGE CODE 19207	12460291		
(AMG U1770)	00-07-24	REVISION LEVEL F-A	SHEET 2		

<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>MODEL</u>	<u>QTY.</u>
9428795	SCREW	ALL	5
9430677	SCREW	ALL	12
9430724	SCREW	ALL	1

2-2. THE FOLLOWING ITEM IS REQUIRED, BUT IS NOT INCLUDED IN THE KIT AND MUST BE REQUISITIONED.

<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>QTY.</u>
MIL-S-46163	SEALING COMPOUND	1

2-3. EXISTING MATERIAL. ALL MATERIAL REMOVED AND NOT REUSED DURING INSTALLATION WILL BE RETURNED TO STOCK FOR DISPOSITION IN ACCORDANCE WITH AR 725-50.

SECTION III. INSTALLATION PROCEDURE

3-1. VEHICLE PREPARATION.

- A. DISCONNECT BATTERY GROUND CABLES. (REFER TO TM 9-2320-280-20 OR TM 9-2320-387-24.)
- B. DRAIN FUEL FROM FUEL TANK. (REFER TO TM 9-2320-280-20 OR TM 9-2320-387-24.)
- C. REMOVE BRAKE ROTOR PROTECTION GUARDS FROM FRONT AND REAR CROSSMEMBERS. (REFER TO TM 9-2320-387-24.)
- D. REMOVE EIGHT GUARD BRACKETS FROM FRONT AND REAR CROSSMEMBERS BY REMOVING TWELVE SCREWS, TWENTY-FOUR WASHERS, AND TWELVE NUTS AS SHOWN IN FIGURE 1.

NOTE

REMOVE BURRS AND SHARP EDGES.

- E. CUT AND REMOVE SECTION OF REINFORCEMENT FROM CROSSMEMBER C AS SHOWN IN FIGURE 2.

3-2. FUEL TANK SHIELD INSTALLATION.

- A. REMOVE TWO NUTS, WASHERS, AND SCREWS FROM UPPER AND LOWER FUEL TANK STRAPS AS SHOWN IN FIGURE 3.

NOTE

REMOVE BURRS AND SHARP EDGES.

- B. REMOVE SECTION OF 12447150 FUEL TANK SHIELD AS SHOWN IN FIGURE 3.

DRAWING CONTROL
CHANGE DATE
A / 7-24-00

NOTE

IF UPPER AND LOWER STRAPS TOUCH AFTER CORRECT TORQUE IS APPLIED
TO SCREWS, STRAPS ARE UNSERVICEABLE AND MUST BE REPLACED.

- C. POSITION FUEL TANK SHIELD (12447150) TO BOTTOM OF FUEL TANK AND SECURE WITH TWO
UPPER STRAPS, 12460145-1 SCREW, 12460145-2 SCREW, TWO EXISTING WASHERS, LOWER
STRAPS, AND EXISTING NUTS AS SHOWN IN FIGURE 3. TIGHTEN SCREWS TO 23-27 LB-IN. (3 N·m).

- D. INSTALL EXISTING DRAIN PLUG IN FUEL TANK AS SHOWN IN FIGURE 3.

M998A2

TITLE INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	SIZE A	CAGE CODE 19207	12460291	REVISION LEVEL A	SHEET 3
	(AMG U1770)	00-07-24			

3-3. REAR CROSMEMBER HOLE DRILLING.

- A. LOCATE, MARK, AND DRILL SIX 0.375-INCH DIAMETER HOLES IN REAR PANEL OF CROSMEMBER A AS SHOWN IN FIGURE 4.

NOTE

ENSURE WHEN LOCATING HOLES THAT THEY ARE IN LINE WITH EXISTING DRILLED HOLES.

- B. USING HOLES DRILLED IN STEP A AS A GUIDE, LOCATE, MARK, AND DRILL SIX 0.375-INCH DIAMETER HOLES IN FRONT PANEL OF CROSMEMBER A AS SHOWN IN FIGURE 4.
- C. LOCATE, MARK, AND DRILL THREE 0.438-INCH DIAMETER HOLES IN FRONT PANEL OF CROSMEMBER B AS SHOWN IN FIGURE 5.

NOTE

ENSURE WHEN LOCATING HOLES THAT THEY ARE IN LINE WITH EXISTING DRILLED HOLES.

- D. USING HOLES DRILLED IN STEP C AS A GUIDE, LOCATE, MARK, AND DRILL THREE 0.438-INCH DIAMETER HOLES IN REAR PANEL OF CROSMEMBER B AS SHOWN IN FIGURE 5.

3-4. FRONT CROSMEMBER HOLE DRILLING.

NOTE

YODE ON DIFFERENTIAL MAY HAVE TO BE TURNED TO ALLOW ACCESS TO MOUNTING BRACKET SCREW.

- A. REMOVE TWO SCREWS AND WASHERS SECURING FRONT DIFFERENTIAL TO MOUNTING BRACKET AS SHOWN IN FIGURE 6.
- B. REMOVE TWO SCREWS, FOUR WASHERS, TWO NUTS, AND MOVE MOUNTING BRACKET AWAY FROM REAR OF CROSMEMBER C AS SHOWN IN FIGURE 7.
- C. REMOVE FOUR NUTS, WASHERS, AND LOWER SWAY BAR FROM LEFT AND RIGHT FRAME RAILS AS SHOWN IN FIGURE 8.

DRAWING CONTROL
CHANGE DATE
A/7-24-00

CAUTION

WHEN DRILLING, PLACE SCRAP METAL BETWEEN CROSMEMBER C AND DISC BRAKE ROTOR TO ENSURE THAT DISC BRAKE ROTOR IS NOT DAMAGED.

NOTE

STEERING WHEEL MAY HAVE TO BE TURNED TO ALLOW ACCESS TO CROSMEMBER DRILLING LOCATIONS.

- D. LOCATE, MARK, AND DRILL FOUR 0.438-INCH DIAMETER HOLES IN REAR PANEL OF CROSMEMBER C AS SHOWN IN FIGURE 9.

M998A2

TITLE INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	SIZE A	CAGE CODE 19207	12460291		
	(AMG U1770)	00-07-24	REVISION LEVEL	A	SHEET 4

DRAWING
CONTROL
CHANGE DATE
A/7-24-00

NOTE

- USE CARE WHEN DRILLING THROUGH HOLE IN REAR PANEL INTO FRONT PANEL OF CROSSMEMBER. IF ACCESSING PROPER HOLE LOCATION IS DIFFICULT, TRANSFER HOLE LOCATION TO FRONT SIDE OF FRONT PANEL FOR DRILLING OPERATION.
 - ENSURE WHEN LOCATING HOLES THAT THEY ARE IN LINE WITH EXISTING DRILLED HOLES.
- E. USING HOLES DRILLED IN STEP D AS A GUIDE, LOCATE, MARK, AND DRILL THREE 0.438-INCH DIAMETER HOLES IN FRONT PANEL OF CROSSMEMBER C AS SHOWN IN FIGURE 9.
- F. APPLY MIL-S-46163 SEALING COMPOUND TO TWO EXISTING SCREWS AND SECURE MOUNTING BRACKET TO FRONT DIFFERENTIAL WITH TWO SCREWS AND WASHERS AS SHOWN IN FIGURE 6. TIGHTEN SCREWS TO 110 LB-FT (149 N·m).
- G. POSITION MOUNTING BRACKET ON REAR OF CROSSMEMBER C AND SECURE WITH TWO EXISTING SCREWS, FOUR WASHERS, AND TWO MS51943-39 NUTS AS SHOWN IN FIGURE 7. TIGHTEN SCREWS TO 90 LB-FT (122 N·m).
- H. POSITION LOWER SWAY BAR TO LEFT AND RIGHT FRAME RAILS AND SECURE WITH FOUR EXISTING WASHERS AND 9422299 NUTS AS SHOWN IN FIGURE 8.

3-5. REAR SHIELD INSTALLATION.

NOTE

WHEN INSTALLING SPACERS IN CROSSMEMBER, ENDS OF SPACERS MAY BE FILED FOR EASE OF INSTALLATION.

- A. POSITION THREE 12447145 MOUNTING BRACKETS TO CROSSMEMBER A AND SECURE WITH SIX 453039 SCREWS, TWELVE 2436162 WASHERS, SIX 12338186-69 REAR SPACERS, AND MS51943-33 NUTS AS SHOWN IN FIGURE 10. DO NOT TIGHTEN SCREWS.
- B. POSITION 12447144 REAR SHIELD ASSEMBLY TO TOP MOUNT HOLES ON THREE MOUNTING BRACKETS AND INSTALL THREE B1821BH038C113N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 10. DO NOT TIGHTEN SCREWS.

NOTE

WHEN INSTALLING SPACERS IN CROSSMEMBER, ENDS OF SPACERS MAY BE FILED FOR EASE OF INSTALLATION.

- C. POSITION REAR SHIELD ASSEMBLY TO CROSSMEMBER B AND SECURE WITH THREE 9428795 SCREWS, SIX 2436163 WASHERS, THREE 12338186-69 REAR SPACERS, AND MS51943-35 NUTS AS SHOWN IN FIGURE 10. DO NOT TIGHTEN SCREWS.
- D. TIGHTEN SCREWS INSTALLED IN STEP A TO 24 LB-FT (32 N·m).
- E. TIGHTEN SCREWS INSTALLED IN STEPS B AND C TO 44 LB-FT (60 N·m).

3-6. TRANSFER CASE SHIELD INSTALLATION.

POSITION 12447151 TRANSFER CASE SHIELD ON TRANSMISSION CROSSMEMBER AND SECURE WITH TWO B1821BH038C100N SCREWS, FOUR 2436163 WASHERS, AND TWO MS51943-35 NUTS AS SHOWN IN FIGURE 11. TIGHTEN SCREWS TO 44 LB-FT (60 N·m).

M998A2

TITLE INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	SIZE A	CAGE CODE 19207	12460291		
			(AMG U1770)	00-07-24	REVISION LEVEL A

3-7. INTERMEDIATE SHIELD ASSEMBLY INSTALLATION.

DRAWING CONTROL
CHANGE DATE
A/7-24-00
A/7-25-00

NOTE

- STEPS A, B, AND F ARE FOR M998A2 SERIES AND M1113 VEHICLES.
- PROCEED TO STEPS C, D, E, AND G FOR M1114 VEHICLE INSTALLATION.
- STEPS H AND I ARE FOR ALL VEHICLES.

- A. REMOVE SCREW, TWO WASHERS, AND NUT FROM LEFT FRAME RAIL. INSTALL 12447146 LEFT-HAND SHIELD BRACKET ON OUTSIDE OF LEFT FRAME RAIL WITH EXISTING SCREW, TWO WASHERS, AND MS51943-39 NUT AS SHOWN IN FIGURE 12. DO NOT TIGHTEN SCREW.
- B. REMOVE SCREW, TWO WASHERS, AND NUT FROM RIGHT FRAME RAIL. INSTALL 12447147 RIGHT-HAND SHIELD BRACKET ON INSIDE OF RIGHT FRAME RAIL WITH EXISTING SCREW, TWO WASHERS, AND MS51943-39 NUT AS SHOWN IN FIGURE 12. DO NOT TIGHTEN SCREW.
- C. REMOVE SCREW FROM TWO ^{TRANSMISSION OIL COOLER TUBE} ~~FUEL LINE~~ P-CLAMPS ON RIGHT FRAME RAIL AS SHOWN IN FIGURE 13.

NOTE

ENSURE WHEN POSITIONING BRACKET ON RIGHT FRAME RAIL THAT 0.75 DIA. BOSS ENGAGES INTO 0.75 DIA. HOLE IN RIGHT FRAME RAIL.

- D. POSITION 12460501 RIGHT-HAND BRACKET ON RIGHT FRAME RAIL BEHIND TWO ~~FUEL LINE~~ P-CLAMPS AND INSTALL WITH 172487 SCREW AS SHOWN IN FIGURE 13. DO NOT TIGHTEN SCREW.
TRANS. OIL COOLER TUBE
FUEL LINE
DUFF. COOLER TUBES AND
INTO FRAME CAGE TUBE HOLE
- E. POSITION 12460499 ROD IN LEFT ENGINE MOUNT AND INSTALL 12338186-70 SPACER, 12460500 LEFT-HAND BRACKET, TWO 2436165 WASHERS, AND MS51943-39 NUTS AS SHOWN IN FIGURE 14. DO NOT TIGHTEN NUTS.

NOTE

ENSURE TWO TUBE SUPPORTS ARE POSITIONED ON TOP OF TRANSMISSION CROSSMEMBER WHEN INSTALLING INTERMEDIATE SHIELD TO MOUNTING BRACKET.

- F. POSITION 12447143 INTERMEDIATE SHIELD ASSEMBLY TO LEFT- AND RIGHT-HAND SHIELD BRACKETS. INSTALL EIGHT 9430677 SCREWS, SIXTEEN 2436162 WASHERS, AND EIGHT MS51943-33 NUTS AS SHOWN IN FIGURE 12. DO NOT TIGHTEN NUTS.
- G. POSITION 12447143 INTERMEDIATE SHIELD ASSEMBLY TO LEFT- AND RIGHT-HAND BRACKETS. INSTALL FOUR 9430677 SCREWS, EIGHT 2436162 WASHERS, AND FOUR MS51943-33 NUTS AS SHOWN IN FIGURE 15. DO NOT TIGHTEN NUTS.
- H. POSITION TWO 12447148 TUBE SUPPORT SHIELD BRACKETS, B1821BH038C150N SCREWS, FOUR 2436163 WASHERS, 12447149 SPECIAL WASHERS, AND TWO MS51943-35 NUTS THROUGH 12447143 INTERMEDIATE SHIELD ASSEMBLY AND TRANSMISSION CROSSMEMBER AS SHOWN IN FIGURE 12. DO NOT TIGHTEN SCREWS.
- I. SECURE TWO TUBE SUPPORT BRACKETS TO TRANSMISSION CROSSMEMBER WITH FOUR 9430677 SCREWS, EIGHT 2436162 WASHERS, AND FOUR MS51943-33 NUTS AS SHOWN IN FIGURE 12. DO NOT TIGHTEN SCREWS.

M998A2

TITLE	SIZE	CAGE CODE	12460291		
INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	A	19207	(AMG U1770)	00-07-24	REVISION LEVEL A SHEET 6

3-8. FRONT SKID PLATE INSTALLATION.

DRAWING CONTROL
CHANGE DATE
1/7-04-00

NOTE

- FOR M998A2 SERIES VEHICLES WITH WINCH, PERFORM STEP A.
 - FOR M1113 VEHICLE WITHOUT FRONT HYDRAULIC WINCH, PERFORM STEP B.
 - FOR M998A2 SERIES VEHICLE WITHOUT FRONT WINCH, PERFORM STEP C.
 - FOR M1114 VEHICLE WITH REAR WINCH, PERFORM STEP D.
 - FOR M1113 VEHICLE WITH FRONT HYDRAULIC WINCH, PERFORM STEP G.
- A. POSITION 12447163-2 SKID PLATE ON FRONT BUMPER AND SECURE WITH TWO B1821BH038C100N SCREWS, FOUR 2436163 WASHERS, AND TWO MS51943-35 NUTS AS SHOWN IN FIGURE 16. DO NOT TIGHTEN SCREWS.
 - B. POSITION 12447164 SKID PLATE ON FRONT BUMPER AND SECURE WITH THREE B1821BH038C100N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 17. DO NOT TIGHTEN SCREWS.
 - C. POSITION 12460414 SKID PLATE ON FRONT BUMPER AND SECURE WITH THREE B1821BH038C100N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 18. DO NOT TIGHTEN SCREWS.
 - D. POSITION 12447163-1 SKID PLATE ON FRONT BUMPER AND SECURE WITH THREE B1821BH038C100N SCREWS, FIVE 2436163 WASHERS, AND TWO MS51943-35 NUTS AS SHOWN IN FIGURE 19. DO NOT TIGHTEN SCREWS.

NOTE

- FOR M998A2 W/WINCH AND W/O WINCH SERIES AND M1114 VEHICLES, PERFORM STEP E.
 - FOR M1113 VEHICLES WITHOUT HYDRAULIC WINCH, PERFORM STEP F.
- E. POSITION 12460415 FRONT SHIELD TO SKID PLATE AND INSTALL THREE B1821BH038C113N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURES 16, 18, AND 19. DO NOT TIGHTEN SCREWS.
 - F. POSITION 12447142 FRONT SHIELD TO SKID PLATE AND INSTALL THREE B1821BH038C113N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 17. DO NOT TIGHTEN SCREWS.
 - G. POSITION 12460415 FRONT SHIELD TO BUMPER PLATE AND INSTALL THREE B1821BH038C113N SCREWS, SIX 2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 21. DO NOT TIGHTEN SCREWS.
 - H. INSTALL FRONT SHIELD AND INTERMEDIATE SHIELD ASSEMBLY TO CROSSMEMBER C WITH 9430724 SCREW, TWO 2436163 WASHERS, AND MS51943-35 NUT AS SHOWN IN FIGURE 20. DO NOT TIGHTEN SCREW.
 - I. INSTALL FRONT SHIELD ON CROSSMEMBER C WITH B1821BH038C113N SCREW, TWO 2436163 WASHERS, AND MS51943-35 NUT AS SHOWN IN FIGURE 20. DO NOT TIGHTEN SCREW.

TITLE INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	SIZE A	CAGE CODE 19207	M998A2 12460291		
(AMG U1770)	00-07-24	REVISION LEVEL	A	SHEET 7	

- J. INSTALL INTERMEDIATE SHIELD ASSEMBLY ON CROSMEMBER C WITH 9428795 SCREW, TWO 2436163 WASHERS, AND MS51943-35 NUT AS SHOWN IN FIGURE 20. DO NOT TIGHTEN SCREW.
- K. INSTALL FRONT SHIELD TO CROSMEMBER C WITH 9428795 SCREW, TWO 2436163 WASHERS, AND MS51943-35 NUT AS SHOWN IN FIGURE 20. DO NOT TIGHTEN SCREW.

NOTE

DURING INSTALLATION, MOUNTING SCREWS OR NUTS WERE NOT TIGHTENED TO ALLOW FOR ALIGNMENT OF SKID PLATE, FRONT SHIELD, AND INTERMEDIATE SHIELD.

- L. TIGHTEN SCREWS OR NUTS INSTALLED IN PARA. 3-7, STEPS A, B, E, AND G TO 90 LB-FT (122 N·m).
- M. TIGHTEN SCREWS OR NUTS INSTALLED IN PARA. 3-7, STEPS F, H, AND J TO 24 LB-FT (33 N·m).
- N. TIGHTEN SCREWS INSTALLED IN PARA. 3-7, STEPS D AND I AND PARA. 3-8, STEPS A THROUGH J TO 44 LB-FT (60 N·m).

3-9. FINAL PREPARATION.

NOTE

ENSURE FUEL HAS NOT BEEN CONTAMINATED.

- A. RETURN FUEL TO TANK AND CHECK FOR LEAKS.
- B. CONNECT BATTERY CABLES. (REFER TO TM 9-2320-280-20 OR TM 9-2320-387-24.)

DRAWING CONTROL
CHANGE DATE
A/7-24-00

M998A2

TITLE	SIZE	GAGE CODE			
INSTALLATION INSTRUCTIONS, UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495	A	19207			
	(AMG U1770)	00-07-24	REVISION LEVEL	A	SHEET 8

DRAWING CONTROL		AM General Corporation			
CHANGE DATE	CHANGE NO.	CHG. LET.	CHANGE	DATE	DR. CH.
7/1/98-23-98	44-473		PROD. RELEASE	10-12-98	KJ
1/7/2000-00	144-31009		PROD. RELEASE ECR-44720	1-23-00	62
A/1/7-25-00	144-31204		SEE INT'L 3 FOR CHANGE	2-13-00	52

NOTES:

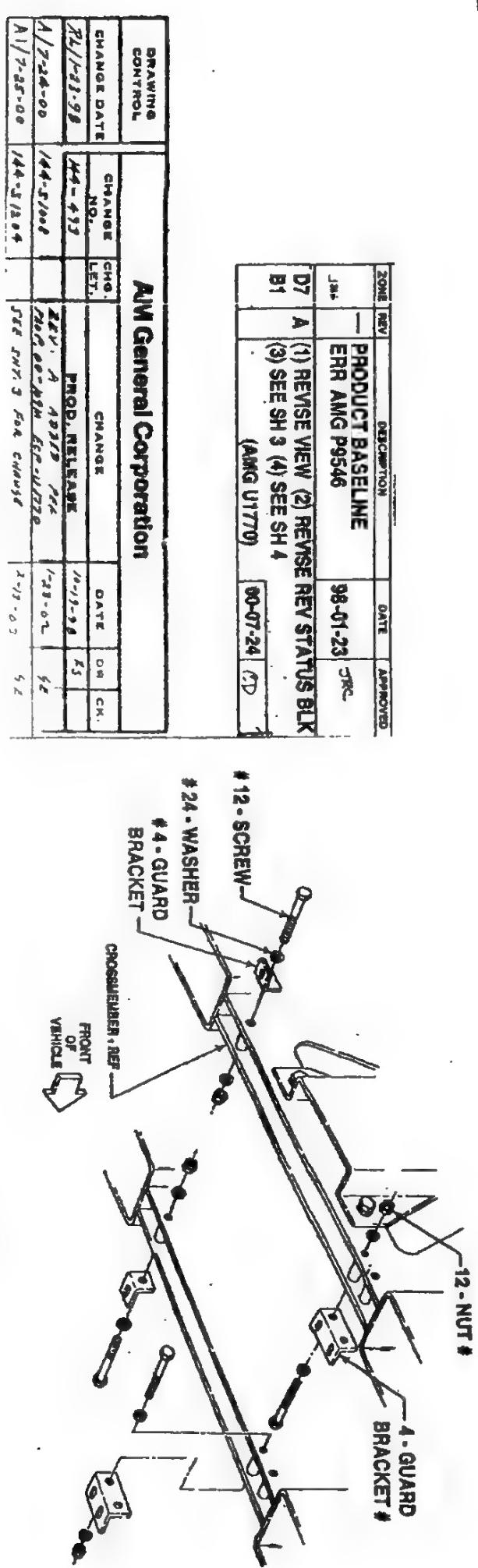
1. APPLICABLE STANDARDS OR SPECIFICATIONS:
A. DOD-STD-1000 (AF)
2. THIS DRAWING IS FOR INSTALLATION PURPOSES
ONLY. ALL ITEMS MARKED # ARE INCLUDED IN KIT.
3. CALLOUTS IDENTIFIED AS FOLLOWS:

- # NEW PARTS
- * PARTS TO BE REMOVED AND DISCARDED
- A PARTS TO BE REMOVED AND REUSED

M998A2

A	A	A
SHEET 4	SHEET 3	SHEET 2
		SHEET 1
REVISION STATUS OF SHEETS		

FIGURE 1



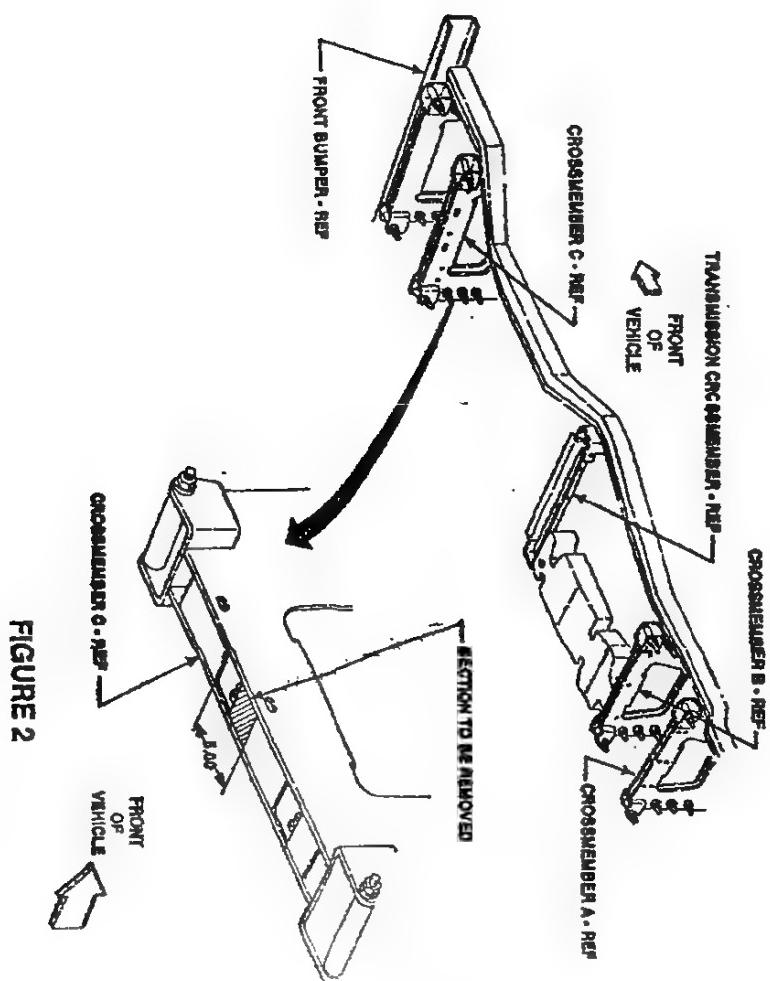


FIGURE 2

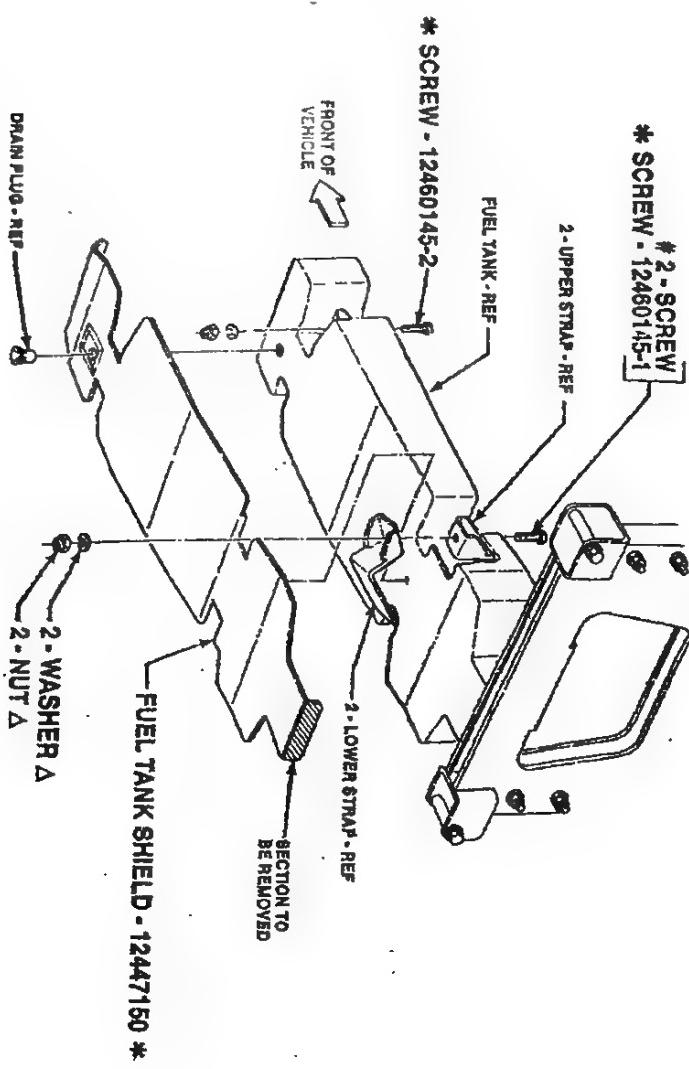


FIGURE 3

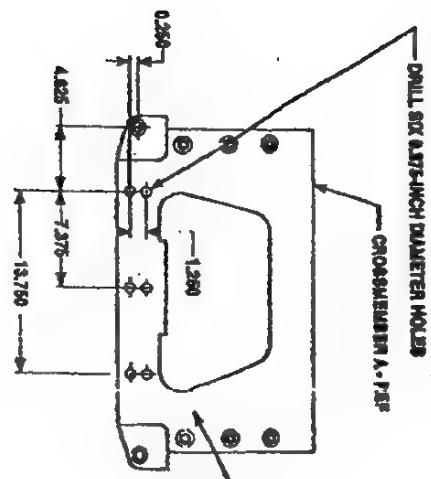


FIGURE 4

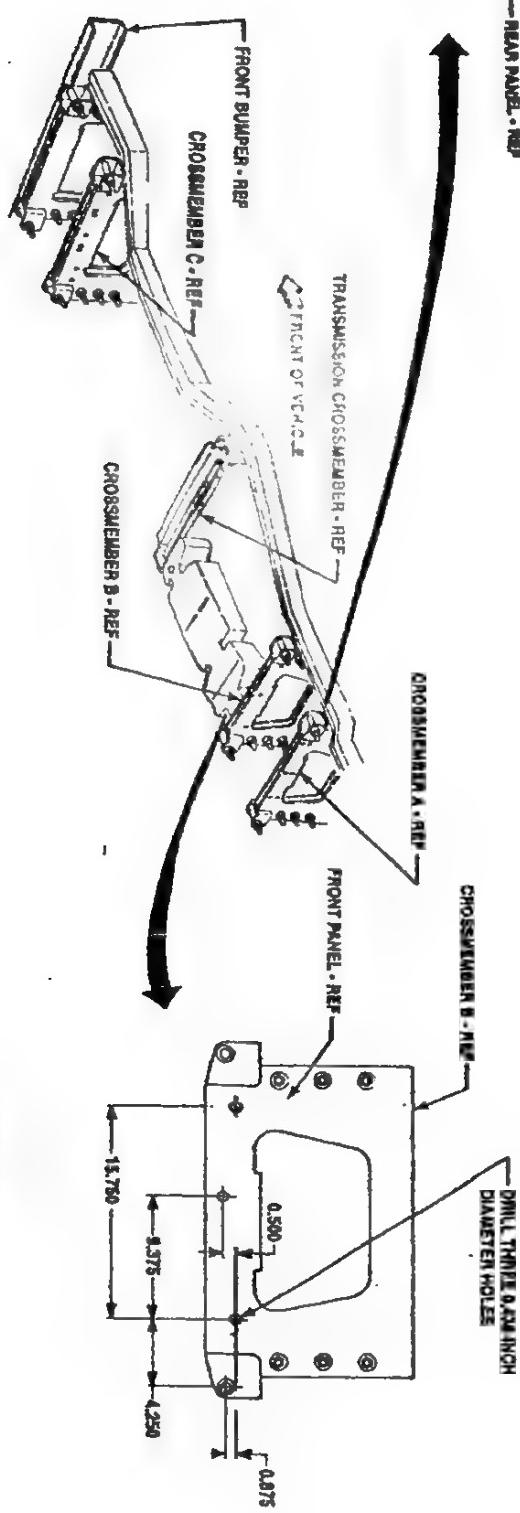


FIGURE 5

ZONE	REV	DESCRIPTION	DATE	REVISION	APPROVED
		PRODUCT BASELINE	10/12/98	KJ	98-01-23 JRC.

DRAWING CONTROL	AM General Corporation				
CHANGE DATE	CHANGE NO.	CHG. LIT.	CHANGE	DATE	DR. CH.
10/12/98	144-423		PROD. RELEASE	10/12/98	KJ

M998A2

DRAWING CONTROL		AM General Corporation			
CHANGE DATE	CHANGE NO.	CHG. LIT.	CHANGE	DATE	DR. CH.
10/12/98	144-423		PROD. RELEASE	10/12/98	KJ
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES FOR FRAMES ON A PLATE					
DAE07-92-C-1010 CONTRACTOR AM General Corp COMMERCIAL INDUSTRIAL SERVICES US ARMY TANK-AUTOMOTIVE COMMAND WARREN, MICHIGAN 48397-5000					
INSTALLATION DRAWING UNDERBODY PROTECTION ACCESSORY KITS 57K3492, 57K3493, 57K3494, AND 57K3495					
DESIGN BY HAGEN/DRABER DRAWING APPROVAL L. L. L. 98-03-06 DESIGN APPROVAL P. H. H. 98-03-16					
HEAT ASST					
USED ON					
MATL. ENGR					
APPLICATION					



FIGURE 6

△ 2 - WASHER
△ 2 - SCREW

SIZE

CASE CODE

19207

12460292

SCALE NONE

UNIT WT

SHEET 2

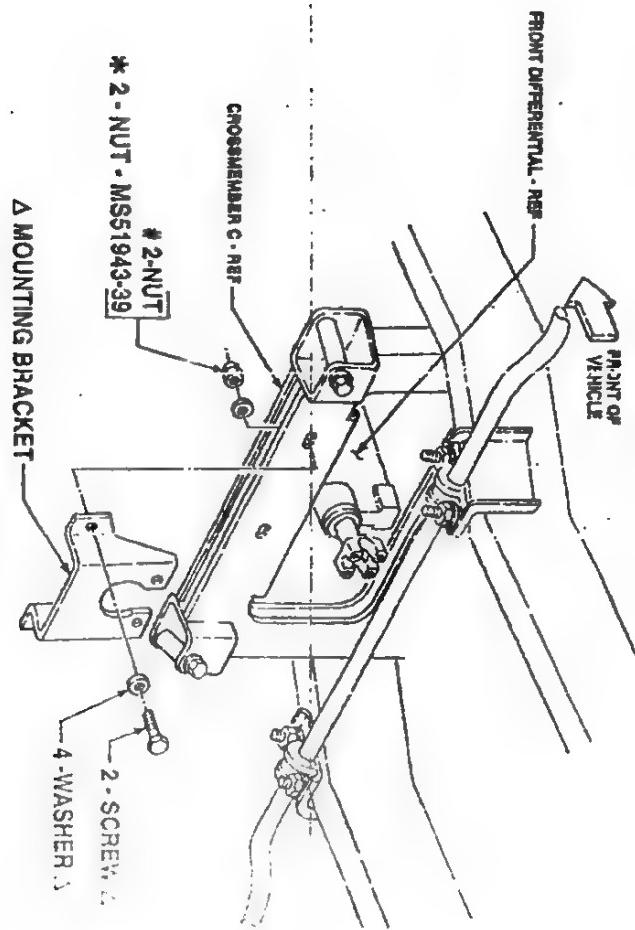


FIGURE 7

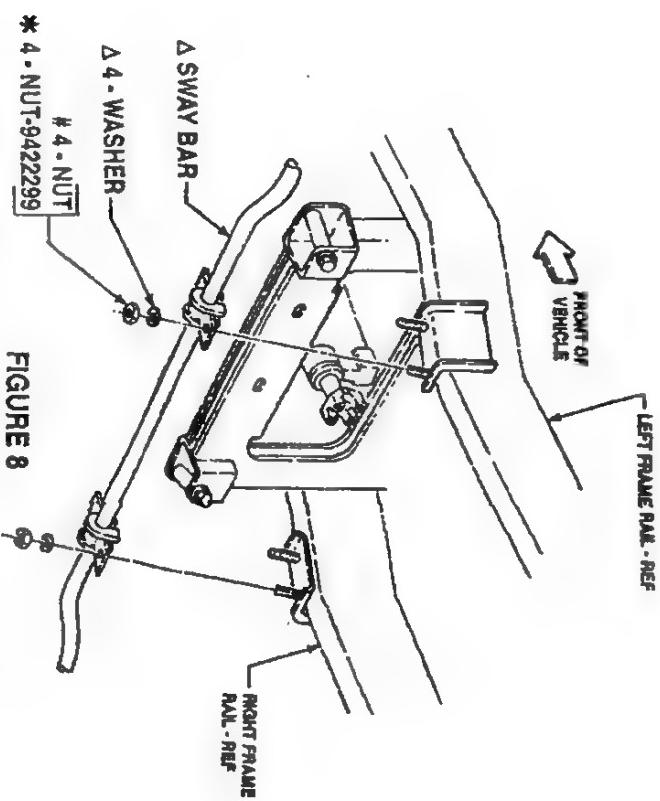


FIGURE 8

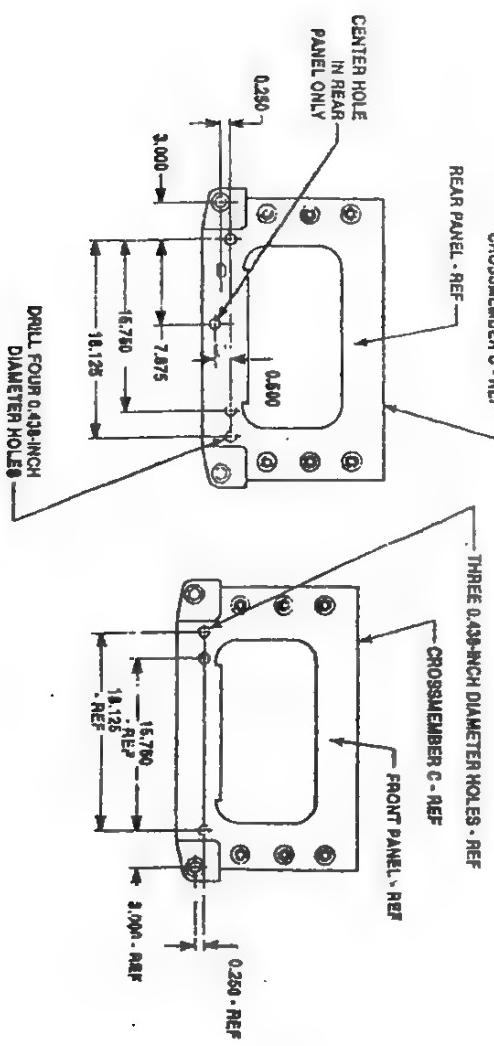


FIGURE 9

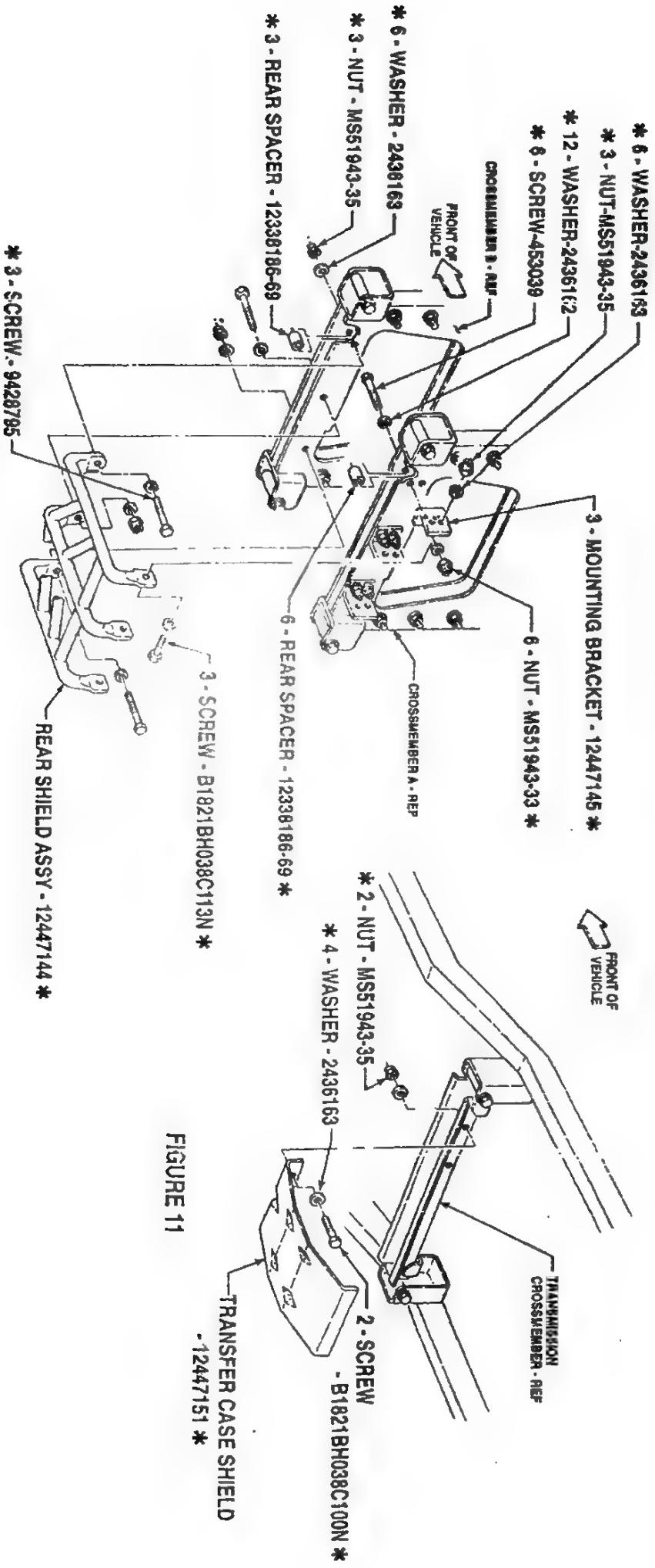
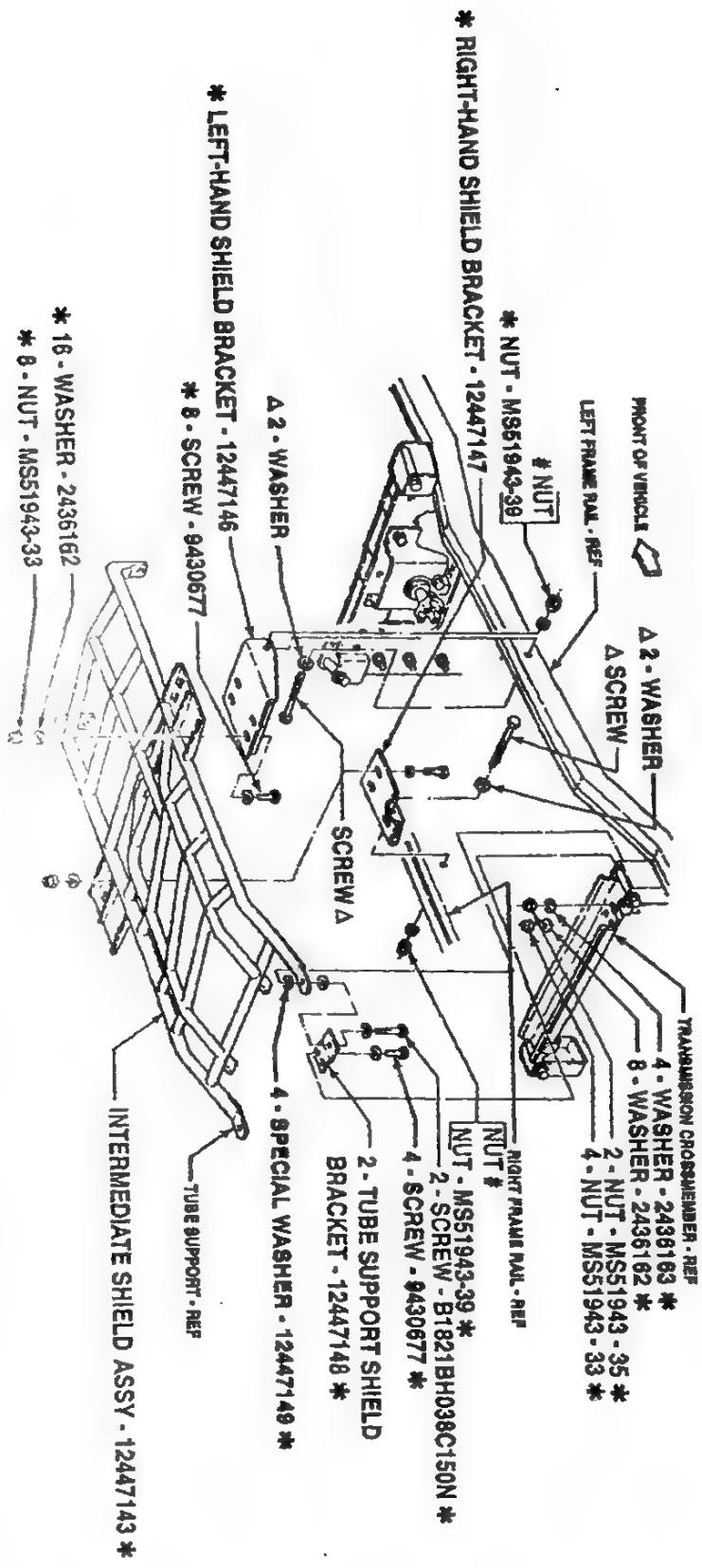


FIGURE 10

FIGURE 11

**M
I
C
H
A
G
A
N**

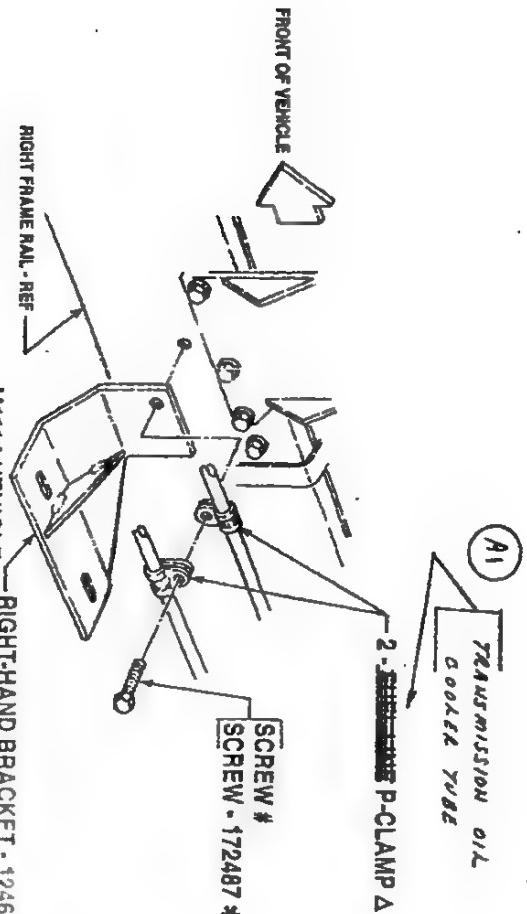
FIGURE 12



ZONE REV		DESCRIPTION	DATE	REVISION NUMBER	APPROVED
A4	A	PRODUCT BASELINE - ERR AMG P8546	98-01-23	DR-L	
A4	A	(3) REVISE NOTE (AMG U1770)	00-07-24	CD	04/

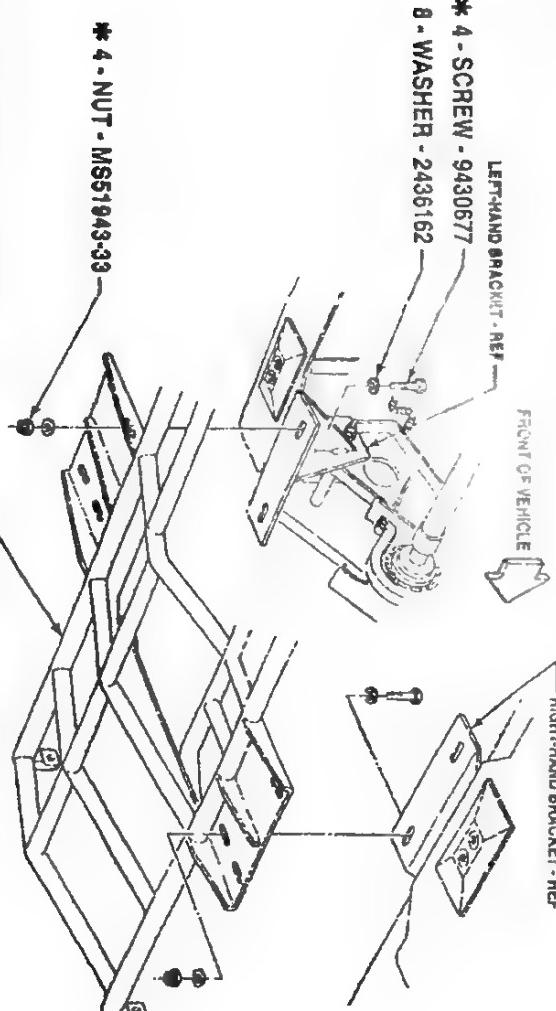
		UNLESS OTHERWISE SPECIFIED:	
		DIMENSIONS ARE IN INCHES	
		TOP RAILS ON PLATE	
		FRONT	
		REAR	
		DRAWING	
		<i>John J. Schaefer</i>	
		DESIGN APPROVAL SIGNATURE	
		<i>John J. Schaefer</i>	
		DRAWING APPROVAL SIGNATURE	
		<i>John J. Schaefer</i>	
		DRAWING APPROVAL NUMBER	
		C-9-03-04	
		DESIGN APPROVAL NUMBER	
		P-88-03-16	
		SCALE: NONE	
		UNIT WT:	
		SHEET 3	
		U.S. ARMY TANK-AUTOMOTIVE COMMAND	
		WARREN, MICHIGAN 48397-5000	
		DESIGN ACTIVITY	
		CONTRACT NUMBER	
		DAEQT-82-C-RM10	
		CONTRACTOR	
		AM General Corp.	
		GENERAL CONTRACTOR	
		DATE ISSUED	
		06-07-94	
		ENGINEER	
		John J. Schaefer	
		DRAWING NUMBER	
		19207	
		12460292	
		INSTALLATION DRAWING	
		UNDERBODY PROTECTION ACCESSORY	
		KITS 57K3492, 57K3493, 57K3494,	
		AND 57K3495	

SPACER - 12338186-70 *
LEFT ENGINE MOUNT - REF



M1114 VEHICLE — RIGHT-HAND BRACKET - 12460501 *

FIGURE 13



* LEFT-HAND BRACKET - 12460500

M1114 VEHICLE

FIGURE 14

*# INTERMEDIATE SHIELD ASSEMBLY - 12447143

FIGURE 15

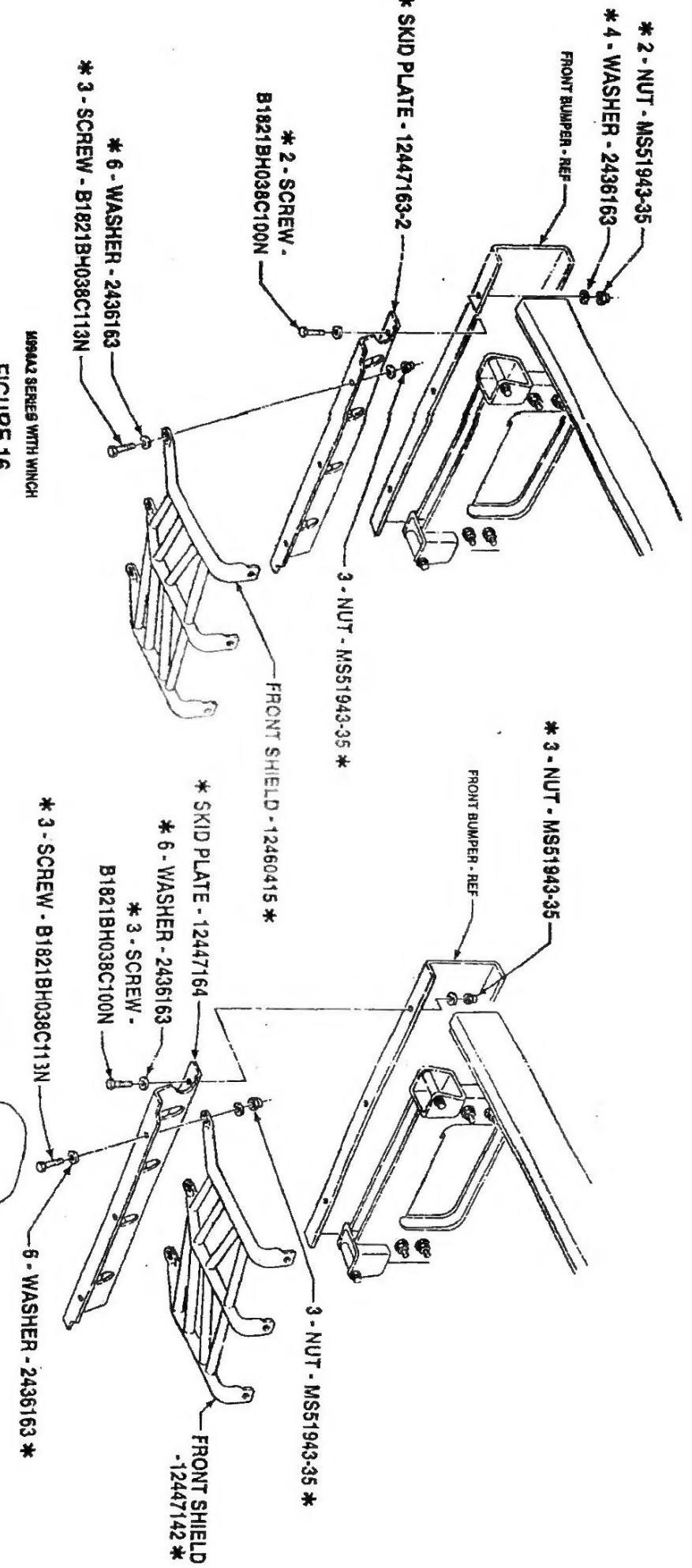


FIGURE 16

M1113 VEHICLE WITHOUT WINCH

FIGURE 17

DRAWING CONTROL		REVISION			
ZONE	REV.	DESCRIPTION		DATE	APPROVED
ZL	—	PRODUCT BASELINE		98-01-23	SRC
C2	A	ADDED FIG 21			
		(AMG U1770)	00-07-24	CJ	

PART NO. _____

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES ON

PLACES

1 PLACE

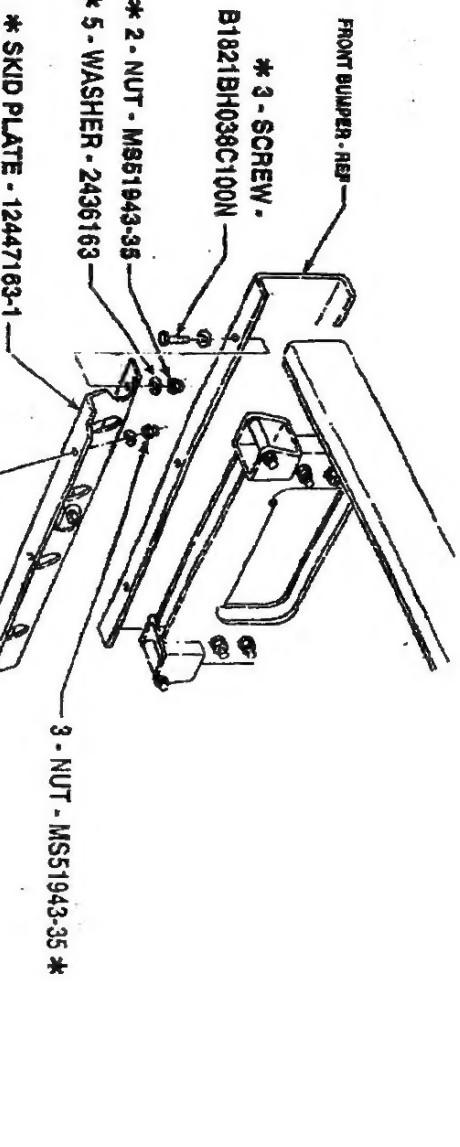


FIGURE 19
 * 6 - WASHER - 2436163
 * 3 - SCREW - B1821BH038C113N
 * NUT - MS51943-35
 * SCREW - 9430724
 * 2 - WASHER - 2436163
 CROSSEMBEER C - REF
 * NUT - MS51943-35
 * SCREW - 9430724
 * 2 - WASHER - 2436163 *
 * SCREW - B1821BH038C113N *
 * 2 - WASHER - 2436163 *
 * SCREW - 9428795 *
 * SCREW - 9428795 *
 * 2 - WASHER - 2436163 *

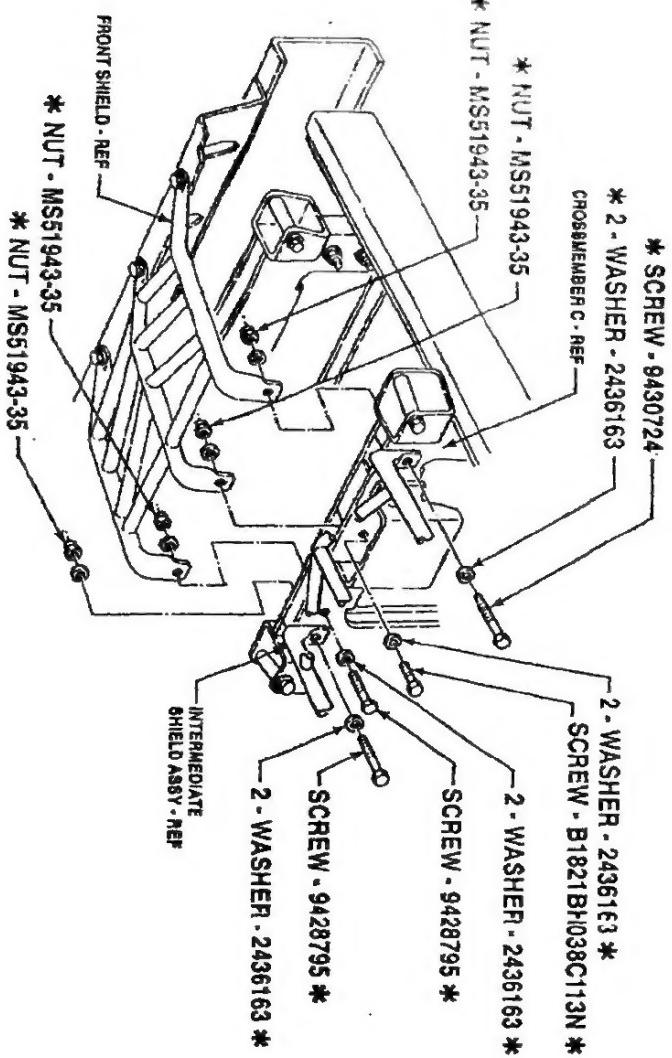


FIGURE 20

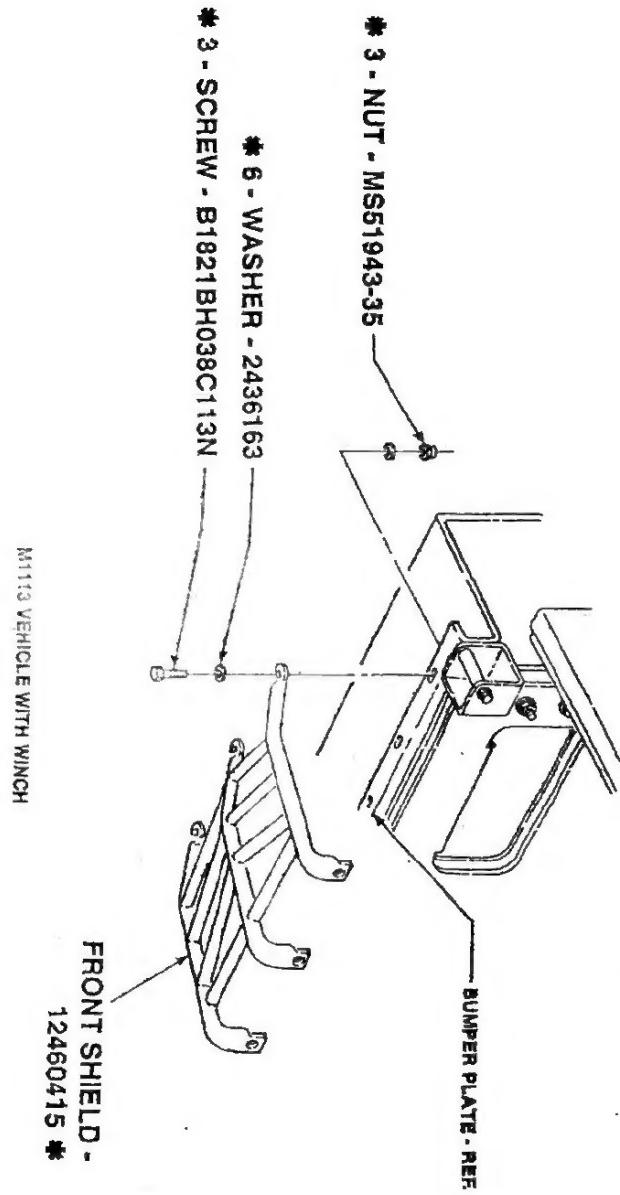


FIGURE 21

M113 VEHICLE WITH WINCH